

CLAIMS

1. A transdermal delivery system (TDS) comprising a backing layer inert to the components of the matrix, a self-adhesive matrix containing an amine-functional drug and a protective foil or sheet to be removed prior to use, characterized in that the self-adhesive matrix consists of a solid or semi-solid semi-permeable polymer
  - (1) wherein an amine functional drug in its free base form has been incorporated,
  - (2) which is saturated with the amine functional drug and contains said drug as a multitude of microreservoirs within the matrix,
  - (3) which is highly permeable for the free base of the amine functional drug,
  - (4) which is impermeable for the protonated form of the amine functional drug,
  - (5) wherein the maximum diameter of the microreservoirs is less than the thickness of the matrix.
2. The TDS according to claim 1, characterized in that the mean diameter of the microreservoirs is in the range of 0.5 to 20  $\mu\text{m}$ .
3. The TDS according to claim 1, characterized in the amine functional drug having an octanol/water partitioning coefficient  $\log p \geq 2.8$  at pH 7.4.
4. The TDS according to claim 1, characterized in the amine functional drug having a pKa of 7.4 to 8.4.

5. The TDS according to claim 1, characterized in that the amine functional drug is a dopamine D2 receptor agonist.
6. The TDS according to claim 5, characterized in that the dopamine D2 receptor agonist is an aminotetraline compound.
7. The TDS according to claim 6, characterized in that the aminotetraline compound is rotigotine.
8. The TDS according to claim 1, characterized in that the amine-functional drug is an anticholinergic drug.
9. TDS according to claim 8, characterized in that the anticholinergic drug is oxybutynine.
10. The TDS according to claim 1, characterized in the self-adhesive matrix being free of particles that can absorb salts of the amine functional drug at the TDS/skin interface.
11. The TDS according to claim 1, characterized in that the polymer matrix comprises a silicone-type pressure sensitive adhesive.
12. The TDS according to claim 1, characterized in that the polymer matrix comprises two or more silicone-type pressure sensitive adhesives as the main adhesive components.

13. The TDS according to claim 12, wherein the silicone type pressure sensitive adhesive is a blend of a high tack silicone type pressure sensitive adhesive comprising polysiloxane with a resin and a medium tack silicone type pressure sensitive adhesive comprising polysiloxane with a resin.
14. Method for treatment of a patient suffering from a disease treatable by an amine functional drug by applying the TDS according to claim 1 to the skin of the patient.